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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,606	07/10/2003	Mario Schroeder	MSA 256	3460
7590 06/29/2006				
HORST KASPER 13 FOREST DRIVE WARREN, NJ 07059			EXAMINER KAO, CHIH CHENG G	
			ART UNIT 2882	PAPER NUMBER

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/616,606	Applicant(s) SCHROEDER ET AL.	
	Examiner Chih-Cheng Glen Kao	Art Unit 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 12-16 and 18-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2, 7-9, 12-16, 18, 20-39, 41 and 42 is/are rejected.
- 7) ☒ Claim(s) 1, 3-6, 19 and 40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/28/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/28/06 has been entered.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Germany on 7/12/02. It is noted, however, that the Office does not appear to have a certified copy of the 102 31 896.4 application as required by 35 U.S.C. 119(b).

Applicant alleges that a German priority document was mailed to the Office on 8/5/03. Applicant also alleges that they have a receipt postcard stamped 8/11/03. The examiner respectfully asks applicant to submit a copy of the receipt postcard stamped 8/11/03, along with a copy of that German priority document, to fulfill the requirements of 35 U.S.C. 119(b).

3. Receipt is acknowledged of papers filed under 35 U.S.C. 119 (a)-(d) based on an application filed in Germany on 7/8/03. Applicant has not complied with the requirements of 37 CFR 1.63(c), since the oath, declaration or application data sheet does not acknowledge the filing of any foreign application. A new oath, declaration or application data sheet is required in

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the body of which the present application should be identified by application number and filing date.

It is noted that applicant attempted to claim priority to the 102 31 896.4 and the 030 15 337.3 applications in the document titled "Claim of Priority", which was filed 7/10/03. However, this does not fulfill the requirements of 37 CFR 1.63(c). Furthermore, the information provided therein appears incorrect. The filing date of the 102 31 896.4 application is not 7/12/03, and the filing date of the 030 15 337.3 application is not 7/8/00.

Specification

4. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.

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(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(g) BRIEF SUMMARY OF THE INVENTION.

(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(i) DETAILED DESCRIPTION OF THE INVENTION.

(j) CLAIM OR CLAIMS (commencing on a separate sheet).

(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Objections

5. Claims 1-9, 12-16, and 18-42 are objected to because of the following informalities, which appear to be minor draft errors including grammatical and/or lack of antecedent basis problems.

In the following format (location of objection; suggestion for correction), the following correction(s) may obviate the objection(s): (claim 1, line 1, "the actual position"; replacing "the" with - -a- -), (claim 1, line 2; replacing "whereby" with - -wherein- -), (claim 1, line 2; replacing "CT" with - -computed tomography (CT)- -), (claim 1, line 6, "instrument or a multisensor"; replacing "or" with a comma), (claim 1, lines 6-7, "or an ultrasonic"; inserting a comma before "or"), (claim 1, line 9; replacing "whereby" with - -wherein- -), (claim 1, line 10, "the coordinates"; deleting "the"), (claim 1, line 14, "the execution"; deleting "the"), (claim 1, line 16, "the result"; replacing "result" with - -determination- -), (claim 1, line 18, "the volume"; replacing "the" with - -a- -), (claim 1, line 19, "using the CT scanner"; inserting - -by- - before "using"), (claim 1, line 20, "the tolerance volume"; replacing "the" with - -a- -), (claim 1, line 22, in the phrase "an the basis"; replacing "an" with - -on- -), (claim 2, line 1, "the actual position"; replacing "the" with - -a- -), (claim 2, line 2; replacing "whereby" with - -wherein- -),

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(claim 2, line 6, “instrument or a multisensor”; replacing “or” with a comma), (claim 2, line 6, “or an ultrasonic”; inserting a comma before “or”), (claim 2, line 8; replacing “whereby” with - - wherein- -), (claim 2, line 9, “the coordinates”; deleting “the”), (claim 2, line 13, “the execution”; deleting “the”), (claim 2, line 15, “the result”; replacing “result” with - - determination- -), (claim 2, line 17, “the area”; replacing “the” with - -an- -), (claim 2, line 20, “the location”; replacing “location” with - -actual position- -), (claim 2, line 20, “the shape”; replacing “the” with - -a- -), (claim 2, line 21, “the CT image”; replacing “the” with - -a- -), (claim 2, line 21, “the CT data record”; replacing “the” with - -a- -), (claim 3, line 2, “in the case of a predefined target position of the structure,”; replacing “in the case of” with - -when- - and replacing the comma with - -is- -), (claim 5, line 3, “at the most”; deleting “the”), (claim 5, line 5, “at the most”; deleting “the”), (claim 6, line 3, “the target positions”; replacing “positions” with - -position- -), (claim 6, line 3, “the amount”; replacing “the” with - -an- -), (claim 7, line 3, “at the most”; deleting “the”), (claim 7, line 3, “the x-fold”; replacing “the” with - -an- -), (claim 7, line 4; deleting “the tolerance sphere or of”), (claim 7, line 4; replacing “whereby” with - - wherein- -), (claim 8, line 2, “in the case of a predefined target position of the structure,”; replacing “in the case of” with - -when- - and replacing the comma with - -is- -), (claim 8, line 15, “at the most”; deleting “the”), (claim 8, line 17, “at the most”; deleting “the”), (claim 8, line 18, “the object to be examined”; inserting - -and- - before “the object”), (claim 9, line 2, “the relative position”; replacing “the” with - -a- -), (claim 9, line 2, “the relative orientation”; replacing “the” with - -a- -), (claim 12, line 2, “the actual position”; replacing “the” with - -a- -), (claim 12, line 3; replacing “whereby” with - -wherein- -), (claim 12, lines 6-7, “instrument or a multisensor”; replacing “or” with a comma), (claim 12, line 7, “or an ultrasonic”; inserting a

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comma before “or”), (claim 12, line 9; replacing “whereby” with - -wherein- -), (claim 12, line 10, “the coordinates”; deleting “the”), (claim 12, line 14, “the execution”; deleting “the”), (claim 12, line 16, “the result”; replacing “result” with - -determination- -), (claim 12, line 18, “the area”; replacing “the” with - -an- -), (claim 12, line 20; “using the CT scanner”; inserting - -by- - before “using”), (claim 12, line 21, “the tolerance volume”; replacing “the” with - -an- -), (claim 20, line 23, in the phrase “an the basis”; replacing “an” with - -on- -), (claim 13, line 2, “the actual position”; replacing “the” with - -a- -), (claim 13, line 3; replacing “whereby” with - -wherein- -), (claim 13, lines 6-7, “instrument or a multisensor”; replacing “or” with a comma), (claim 13, line 7, “or an ultrasonic”; inserting a comma before “or”), (claim 13, line 9; replacing “whereby” with - -wherein- -), (claim 13, line 10, “the coordinates”; deleting “the”), (claim 13, line 14, “the execution”; deleting “the”), (claim 13, line 16, “the result”; replacing “result” with - -determination- -), (claim 13, line 18, “the area”; replacing “the” with - -an- -), (claim 13, line 21, “in the case of a predefined target position of the structure,”; replacing “in the case of” with - -when- - and replacing the comma with - -is- -), (claim 13, line 34, “at the most”; deleting “the”), (claim 13, line 36, “at the most”; deleting “the”), (claim 13, line 37, “the object to be examined”; inserting - -and- - before “the object”), (claim 13, line 42, “the location”; replacing “the” with - -a- -), (claim 13, line 46; replacing “measured results” with - -determined locations- -), (claim 13, line 49, “the location”; replacing “the” with - -a- -), (claim 13, lines 54-55, “the tolerance volume”; replacing “the” with - -a- -), (claim 13, line 60, in the phrase “an the basis”; replacing “an” with - -on- -), (claim 13, line 61; inserting a period at the end of the line), (claim 14, line 1; deleting The process according to Claim 1,”), (claim 14, line 2, “the actual position”; replacing “the” with - -a- -), (claim 14, line 3; replacing “whereby” with - -wherein- -), (claim 14, lines 6-

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7, “instrument or a multisensor”; replacing “or” with a comma), (claim 14, line 7, “or an ultrasonic”; inserting a comma before “or”), (claim 14, line 9; replacing “whereby” with - - wherein- -), (claim 14, line 10, “the coordinates”; deleting “the”), (claim 14, line 14, “the execution”; deleting “the”), (claim 14, line 16, “the result”; replacing “result” with - - determination- -), (claim 14, line 18, “the volume”; replacing “the” with - -a- -), (claim 14, line 23, “the radiation”; deleting “the”), (claim 14, line 24; replacing “whereby the” with - -wherein an- -), (claim 14, line 27, “non co-linear”; inserting a hyphen between “non” and “co-linear”), (claim 14, line 29, “at the most”; deleting “the”), (claim 14, line 31, “at the most”; deleting “the”), (claim 14, line 32, “the relative location”; replacing “the” with - -a- -), (claim 14, line 32, “the relative orientation”; replacing “the” with - -a- -), (claim 14, line 35, “and the following steps”; inserting - -wherein- - after “and”), (claim 14, line 36, “the location”; replacing “the” with - -a- -), (claim 14, line 40; replacing “measured results” with - -determined locations- -), (claim 14, line 44, “the relative position”; replacing “the” with - -a- -), (claim 14, line 54, in the phrase “an the basis”; replacing “an” with - -on- -), (claim 16, line 1; replacing “in-that” with - - in that- -), (claim 16, line 2, “that the center”; replacing “the” with - -a- -), (claim 16, line 3, “located in the center”; replacing “the” with - -a- -), (claim 18, line 3, “the centered projection”; replacing “the” with - -a- -), (claim 18, line 4, “as the center”; replacing “the” with - -a- -), (claim 18, line 4, “center of projection”; inserting a comma after “projection”), (claim 19, line 2, “the actual position”; replacing “the” with - -a- -), (claim 19, line 3; replacing “whereby” with - - wherein- -), (claim 19, lines 6-7, “instrument or a multisensor”; replacing “or” with a comma), (claim 19, line 7, “or an ultrasonic”; inserting a comma before “or”), (claim 19, line 9; replacing “whereby” with - -wherein- -), (claim 19, line 10, “the coordinates”; deleting “the”), (claim 19,

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line 14, “the execution”; deleting “the”), (claim 19, line 16, “the result”; replacing “result” with -
-determination- -), (claim 19, line 18, “the volume” replacing “the” with - -a- -), (claim 19, line
20, “the location”; replacing “location” with - -actual position- -), (claim 19, line 20, “the shape”;
replacing “the” with - -a- -), (claim 19, line 21, “the CT image”; replacing “the” with - -a- -),
(claim 19, line 21, “the CT data record”; replacing “the” with - -a- -), (claim 20, line 2, “the
actual shape”; replacing “the” with - -a- -), (claim 20, line 3; replacing “whereby” with - -
wherein- -), (claim 20, lines 6-7, “instrument or a multisensor”; replacing “or” with a comma),
(claim 20, line 7, “or an ultrasonic”; inserting a comma before “or”), (claim 20, line 9; replacing
“whereby” with - -wherein- -), (claim 20, line 10, “the coordinates”; deleting “the”), (claim 20,
line 14, “the execution”; deleting “the”), (claim 20, line 16, “the result”; replacing “result” with -
-determination- -), (claim 20, line 18, “the area”; replacing “the” with - -an- -), (claim 20, line
22, “the CT image”; replacing “the” with - -a- -), (claim 20, line 22, “the CT data record”;
replacing “the” with - -a- -), (claim 21, line 2, “the actual position”; replacing “the” with - -a- -),
(claim 21, line 3; replacing “whereby” with - -wherein- -), (claim 21, lines 6-7, “instrument or a
multisensor”; replacing “or” with a comma), (claim 21, line 7, “or an ultrasonic”; inserting a
comma before “or”), (claim 21, line 9; replacing “whereby” with - -wherein- -), (claim 21, line
10, “the coordinates”; deleting “the”), (claim 21, line 14, “the execution”; deleting “the”), (claim
21, line 16, “the result”; replacing “result” with - -determination- -), (claim 21, line 18, “the
area”; replacing “the” with - -an- -), (claim 21, line 22, “the position”; replacing “the” with - -a- -
), (claim 21, line 25, “the comparison”; replacing “the” with - -a- -), (claim 21, line 25, “the
results”; deleting “the”), (claim 21, line 25; deleting “thus”), (claim 21, lines 25-26, “the relative
location”; replacing “the” with - -a- -), (claim 21, line 26, “the relative orientation”; replacing

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“the” with - -a- -), (claim 23, line 5, “the rotational positions”; replacing “the” with - -a plurality of- -), (claim 23, line 7, “the detector”; replacing “the” with - -a- -), (claim 23, line 8, “the three-dimensional”; replacing “the” with - -a- -), (claim 23, line 8, in the phrase “an the basis; replacing “an” with - -on- -), (claim 24, line 6, “the rotational positions”; replacing “the” with - -a plurality of- -), (claim 24, line 10, in the phrase “an the basis”; replacing “an” with - -on- -), (claim 24, lines 10-11, “the two dimensional”; inserting a hyphen between “two” and “dimensional”), (claim 24, line 11, “transmission X-ray image”; replacing “image” with - - images- -), (claim 25, line 1, “the actual position”; replacing “the” with - -a- -), (claim 25, line 6, “instrument or a multisensor”; replacing “or” with a comma), (claim 25, line 7, “or an ultrasonic”; inserting a comma before “or”), (claim 25, line 10; replacing “whereby the” with - - wherein- -), (claim 25, line 15, “the volume”; replacing “the” with - -a- -), (claim 25, line 17; replacing “whereby” with - -wherein- -), (claim 25, line 17, “the multisensor coordinate”; deleting “multisensor”), (claim 26, line 2, “in the case of a predefined target position of the structure,”; replacing “in the case of” with - -when- - and replacing the comma with - -is- -), (claim 28, line 3, “at the most”; deleting “the”), (claim 28, line 5, “at the most”; deleting “the”), (claim 29, line 3, “the target positions”; replacing “positions” with - -position- -), (claim 29, line 3, “the amount”; replacing “the” with - -a- -), (claim 30, line 4, “the x-fold”; replacing “the” with - -an- -), (claim 30, line 4; deleting “the tolerance sphere or of”), (claim 30, line 5; replacing “whereby” with - -wherein- -), (claim 31, line 3, “the relative location”; replacing “the” with - -a- -), (claim 31, line 3, “the relative orientation”; replacing “the” with - -a- -), (claim 32, line 2, “the location”; replacing “the” with - -a- -), (claim 32, line 6; replacing “measured results” with - - determined locations- -), (claim 32, line 8, “the location”; replacing “the” with - -a- -), (claim 33,

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line 5, "the tolerance volume"; replacing "the" with - -a- -), (claim 34, line 3, "using the CT scanner"; inserting - -by- - before "using"), (claim 34, lines 3-4, "the tolerance volume"; replacing "the" with - -a- -), (claim 34, line 6, in the phrase "an the basis"; replacing "an" with - -on- -), (claim 35, line 3; inserting a comma after "two-dimensional"), (claim 35, line 5, "the radiation"; deleting "the"), (claim 35, line 6, "the image field"; replacing "the" with - -an- -), (claim 35, lines 8-9, "non co-linear"; inserting a hyphen between "non" and "co-linear"), (claim 35, line 11, "at the most"; deleting "the"), (claim 35, line 13, "at the most"; deleting "the"), (claim 35, line 14, "the relative location"; replacing "the" with - -a- -), (claim 35, line 14, "the relative orientation"; replacing "the" with - -a- -), (claim 35, line 17; replacing "whereby" with - -wherein- -), (claim 35, line 18, "the location"; replacing "the" with - -a- -), (claim 35, lines 19-20; replacing "deter mined" with - -determined- -), (claim 35, line 22; replacing "this" with - -the determined locations- -), (claim 35, line 26, "the relative position"; replacing "the" with - -a- -), (claim 35, line 31; replacing "can create" with - -creates- -), (claim 35, line 32; replacing "can store it" with - -stores the three-dimensional digital CT image- -), (claim 35, line 33, "the shape"; replacing "the" with - -a- -), (claim 35, line 34, in the phrase "an the basis"; replacing "an" with - -on- -), (claim 37, line 2, "that the center"; replacing "the" with - -a- -), (claim 37, line 3, in the phrase "in the center"; replacing "the" with - -a- -), (claim 38, line 3, "the centered projection"; replacing "the" with - -a- -), (claim 38, line 4, "the center"; replacing "the" with - -a- -), (claim 39, line 3, "the centered projection"; replacing "the" with - -a- -), (claim 39, line 4, "the center of projection"; replacing "the" with - -a- -), (claim 40, line 1, "the actual shape"; replacing "the" with - -a- -), (claim 40, line 2; replacing "whereby" with - -wherein- -), (claim 40, line 6, "instrument or a multisensor"; replacing "or" with a comma), (claim 40, lines 6-7, "or an

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ultrasonic”; inserting a comma before “or”), (claim 40, line 9; replacing “whereby” with - - wherein- -), (claim 40, line 10, “the coordinates”; deleting “the”), (claim 40, line 14, “the execution”; deleting “the”), (claim 40, line 16, “the result”; replacing “result” with - - determination- -), (claim 40, line 18, “the volume”; replacing “the” with - -a- -), (claim 40, line 20, “the CT image”; replacing “the” with - -a- -), (claim 40, lines 20-21, “the CT data record”; replacing “the” with - -a- -), (claim 41, line 1, “the actual position”; replacing “the” with - -a- -), (claim 41, line 2; replacing “whereby” with - -wherein- -), (claim 41, line 6, “instrument or a multisensor”; replacing “or” with a comma), (claim 41, lines 6-7, “or an ultrasonic”; inserting a comma before “or”), (claim 41, line 9; replacing “whereby” with - -wherein- -), (claim 41, line 10, “the coordinates”; deleting “the”), (claim 41, line 14, “the execution”; deleting “the”), (claim 41, line 16, “the result”; replacing “result” with - -determination- -), (claim 41, line 18, “the volume”; replacing “the” with - -a- -), (claim 41, line 21, “the position”; replacing “the” with - -a- -), (claim 41, line 23, “the comparison”; deleting “the”), (claim 41, line 24, “the results”; deleting “the”), (claim 41, line 24; deleting “thus”), (claim 41, line 24, “the relative location”; replacing “the” with - -a- -), and (claim 41, line 25, “the relative orientation”; replacing “the” with - -a- -).

Claims 4, 15, 22, 27, 36, and 42 are objected to by virtue of their dependency. For purposes of examination, the claims have been treated as such. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claims 2, 7-9, 12-16, 18, 20-39, 41, and 42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. The phrase "can be" (in claim 2, line 17; claim 8, line 6; claim 8, line 13; claim 8, line 20; claim 9, line 3; claim 12, line 18; claim 13, line 18; claim 13, line 25; claim 13, line 32; claim 13, line 39; claim 13, line 55; claim 14, line 48; claim 16, line 3; claim 20, line 18; claim 21, line 18; claim 25, line 10; claim 25, line 13; claim 25, line 14; claim 26, line 4; claim 27, line 3; claim 28, line 6; claim 30, line 2; claim 31, line 4; claim 32, line 3; claim 32, line 6; claim 32, line 7; claim 32, line 9; claim 33, line 2; claim 34, line 4; claim 34, line 5; claim 35, line 15; claim 35, line 19; claim 35, line 22; claim 35, line 23; claim 35, line 25; claim 35, line 27; claim 35, line 30; claim 37, line 2; claim 37, line 3; claim 38, line 3; and claim 39, line 3) renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d). Claims 8, 9, 15, 16, 18, 22-24, and 26-39 are rejected by virtue of their dependency.

8. The phrase "preferably" (in claim 7, line 5; claim 24, line 3; and claim 30, line 5) renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

9. The phrase "makes it possible" (in claim 21, line 25; and claim 41, line 24) renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of

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the claimed invention. See MPEP § 2173.05(d). Claims 22 and 42 are rejected by virtue of their dependency.

The examiner has examined the claims as best understood as follows.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 25-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Zylka et al. (US 6490477).

11. Regarding claim 25, Zylka et al. discloses a device for determining an actual position of a structure of an object to be examined (col. 12, lines 29-31) in a coordinate system, with a CT scanner (col. 8, lines 14-16), necessarily having a first coordinate system, the CT coordinate system, related to said CT scanner (col. 3, lines 39-45) for transformations, and with a coordinate measuring measurement (MI) which is either a tactile or an optical coordinate measuring instrument, a multisensor coordinate measuring instrument (fig. 1, #9 and 41), or an ultrasonic coordinate measuring instrument, having a second coordinate system, the MI coordinate system, related to said coordinate measuring instrument (col. 3, lines 39-49, measured position of the

surgical instrument), wherein the CT scanner (fig. 2, #2 and 3) and the coordinate measuring instrument (fig. 2, #9) are integrated into one single device (fig. 2, #1).

Note that functional recitations, including wherein coordinates of the object to be examined are determined in the MI coordinate system, and a target position of the structure within the object to be examined is predefined, so that the target position is determined in the MI coordinate system, and the object to be examined is positioned in such a way that the target position of the structure comes to lie within a volume detected by the CT scanner, have not been given patentable weight because they are narrative in form. See MPEP 2114.

12. Regarding claim 26, functional recitations, including when a predefined target position of the structure is relative to at least three selected, non-co-linear points of the object to be examined, the object to be examined is positioned using the coordinate measuring instrument in such a way that at least a part of the object to be examined lies within the volume detected by the CT scanner and this part of the object to be examined contains the target position of the structure, have not been given patentable weight because they are narrative in form. See MPEP 2114.

13. Regarding claim 27, functional recitations, including wherein at a predefined maximum deviation of the target position from the actual position of the structure of the object to be examined, said object is positioned using the coordinate measuring instrument in such a way that the target position as well as the actual position of the structure lie within the volume detected by the CT scanner, have not been given patentable weight because they are narrative in form. See MPEP 2114.

14. Regarding claim 28, functional recitations, including wherein the actual position differs from the target position by a predefined tolerance deviation at most, so that the actual position lies within a tolerance volume whose edge is at a distance from the target position by the tolerance deviation at most, and the object to be examined is positioned using the coordinate measuring instrument in such a way that the tolerance volume lies completely within the volume detected by the CT scanner, have not been given patentable weight because they are narrative in form. See MPEP 2114.

15. Regarding claim 29, functional recitations, including wherein the tolerance volume is a sphere, a tolerance sphere, whose mid-point coincides with the target position and whose radius is predefined by an amount of the maximum deviation of the target position from the actual position of the structure, have not been given patentable weight because they are narrative in form. See MPEP 2114.

16. Regarding claim 30, functional recitations, including wherein the object to be examined is positioned using the coordinate measuring instrument in such a way that the volume detected by the CT scanner has, at most, an x-fold volume of the tolerance volume, wherein x is a predefinable number that is greater than 1, have not been given patentable weight because they are narrative in form. See MPEP 2114.

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17. Regarding claim 31, functional recitations, including wherein a relative location and a relative orientation of the CT coordinate system relative to the MI coordinate system are predefined or are determined by means of calibration, have not been given patentable weight because they are narrative in form. See MPEP 2114.

18. Regarding claim 32, functional recitations, including wherein by means of the coordinate measuring instrument, a location of the at least three selected points of the object to be examined are determined relative to the MI coordinate system, the target position of the structure relative to the MI coordinate system is calculated using the determined locations obtained in step (i), and the target position of the structure is converted from the MI coordinate system to the CT coordinate system so that a location of the target position is determined in the CT coordinate system, have not been given patentable weight because they are narrative in form. See MPEP 2114.

19. Regarding claim 33, Zylka et al. further discloses a traveling mechanism (fig. 1, #21).

Also note that functional recitations, including wherein the object to be examined is positioned relative to the CT scanner by means of a traveling mechanism, using the target position of the structure obtained by means of step (iii) with respect to the CT coordinate system, in such a way that a tolerance volume and thus also the structure lie within the volume detected by the CT scanner, have not been given patentable weight because they are narrative in form. See MPEP 2114.

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20. Regarding claim 34, functional recitations, including wherein by using the CT scanner, a three-dimensional digital CT image of a tolerance volume, including the structure, is created and stored as a CT data record, and the actual position of the structure in the CT coordinate system is determined on the basis of the CT data record, have not been given patentable weight because they are narrative in form. See MPEP 2114.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claims 35-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zylka et al. as applied to claim 25 above, and further in view of Pfoh (US 5291402).

22. Regarding claim 35, Zylka et al. discloses a device as recited above. Zylka et al. further discloses wherein the CT scanner has an X-ray source (fig. 1, #2) and a position resolving detector (fig. 1, #3) having an active detector surface that is sensitive to radiation emitted by the X-ray source (fig. 1, #2), and wherein an image field of the CT scanner is necessarily defined by the size of the active detector surface (fig. 1, #3).

However, Zylka et al. fails to disclose a two-dimensional detector.

Pfoh teaches a two-dimensional detector (fig. 3, #44).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to include the device of Zylka et al. with the detector of Pfoh, since one would be motivated to make such a modification to reduce the effect of skew (col. 5, lines 60-66) as shown by Pfoh.

Also note that functional recitations, including wherein the target position of the structure, relative to at least three selected, non-co-linear points of the object to be examined, is predefined and the actual position differs from the target position by a tolerance deviation at most, so that the actual position lies within a tolerance volume whose edge is at a distance from the target position by the tolerance deviation at most, and a relative location and a relative orientation of the CT coordinate system relative to the MI coordinate system are known or are determined by means of calibration, wherein by means of the coordinate measuring instrument, a location of the at least three selected points of the object to be examined are determined relative to the MI coordinate system, the target position of the structure relative to the MI coordinate system is calculated from the determined locations, the target position of the structure is converted from the MI coordinate system to the CT coordinate system, so that the location thereof is determined in the CT coordinate system, a relative position of the object to be examined relative to the CT scanner is regulated by means of a traveling mechanism, using the target position of the structure relative to the CT coordinate system, in such a way that the tolerance volume and thus also the structure lie within the volume that is detected by the CT scanner, and the CT scanner creates a three-dimensional digital CT image of the tolerance volume, including the structure, and stores the three-dimensional digital CT image as a CT data record, so that the actual position as well as a shape of the structure is determined in the CT

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coordinate system on the basis of the CT data record, have not been given patentable weight because they are narrative in form. See MPEP 2114.

23. Regarding claim 36, functional recitations, including wherein the tolerance volume is a tolerance sphere, so that its radius is defined by the tolerance deviation and its mid-point is defined by the target position, have not been given patentable weight because they are narrative in form. See MPEP 2114.

24. Regarding claim 37, functional recitations, including wherein the CT scanner is regulated in such a way that a center of tolerance volume is located essentially in a center of the volume that is detected by the CT scanner, have not been given patentable weight because they are narrative in form. See MPEP 2114.

25. Regarding claim 38, functional recitations, including wherein the CT scanner is regulated in such a way that, with a centered projection of the tolerance volume with the X-ray source as a center of projection, the image field is completely filled by the projection of the tolerance volume onto the detector, have not been given patentable weight because they are narrative in form. See MPEP 2114.

26. Regarding claim 39, functional recitations, including wherein the CT scanner is regulated in such a way that, with a centered projection of the tolerance volume with the X-ray source as a center of projection, the smallest diameter of the projection of the tolerance volume onto the

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detector and the smallest diameter of the image field of the CT scanner are essentially equal in size, or the largest diameter of the projection of the tolerance volume onto the detector and the largest diameter of the image field of the CT scanner are essentially equal in size, or the largest diameter of the projection of the tolerance volume onto the detector and the smallest diameter of the image field of the CT scanner are essentially equal in size, have not been given patentable weight because they are narrative in form. See MPEP 2114.

Allowable Subject Matter

27. Claims 1-9, 12-16, 18-24, and 40-42 would be allowable if rewritten or amended to overcome the respective claim objections and rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action. The following is a statement of reasons for the indication of allowable subject matter.

28. Regarding claim 1, prior art fails to disclose or fairly suggest a process including wherein, using a determination of step c), an object to be examined is positioned in such a way that a target position of a structure comes to lie within a volume detected by a CT scanner, further characterized in that, by using the CT scanner, a three-dimensional digital CT image of a tolerance volume, including the structure, is created and stored as a CT data record, and an actual position of the structure is determined in a CT coordinate system on the basis of the CT data record, in combination with all the limitations in the claim. Claims 3-7, 9, 23, and 24 contain allowable subject matter by virtue of their dependency.

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29. Regarding claim 2, prior art fails to disclose of fairly suggest a process including wherein, using a determination of step c), an object to be examined is positioned in such a way that a target position of a structure comes to lie within an area that is detected by a coordinate measuring instrument, further characterized in that, in addition to an actual position of the structure, a shape of the structure is also determined on the basis of a CT image or a CT data record, in combination with all the limitations in the claim. Claims 8, 9, 23, and 24 contain allowable subject matter by virtue of their dependency.

30. Regarding claim 12, prior art fails to disclose of fairly suggest a process including wherein, using a determination of step c), an object to be examined is positioned in such a way that a target position of a structure comes to lie within an area that is detected by a coordinate measuring instrument, further characterized in that, by using a CT scanner, a three-dimensional digital CT image of a tolerance volume, including the structure, is created and stored as a CT data record, and an actual position of the structure is determined in a CT coordinate system on the basis of the CT data record, in combination with all the limitations in the claim.

31. Regarding claim 13, prior art fails to disclose of fairly suggest a process including wherein an object to be examined is positioned relative to a coordinate measuring instrument by means of a traveling mechanism, using a target position of a structure obtained by means of step (iii) with respect to an MI coordinate system, in such a way that a tolerance volume and thus also a structure lie within an area that is detected by the coordinate measuring instrument, and using the coordinate measuring instrument, a three-dimensional digital image of a tolerance area,

including the structure, is created and stored as an MI data record, and an actual position of the structure is determined in the MI coordinate system on the basis of the MI data record, in combination with all the limitations in the claim.

32. Regarding claim 14, prior art fails to disclose of fairly suggest a process including wherein a relative position of an object to be examined is regulated with respect to a CT scanner by means of a traveling mechanism, using a target position of a structure obtained by means of step c) relative to a CT coordinate system, in such a way that a tolerance volume and thus also the structure lie within a volume that is detected by the CT scanner, by means of the CT scanner, a three-dimensional digital CT image of the tolerance volume, including the structure, is created and stored as a CT data record, and an actual position of the structure is determined in the CT coordinate system on the basis of the CT data record, in combination with all the limitations in the claim. Claims 15, 16, and 18 contain allowable subject matter by virtue of their dependency.

33. Regarding claim 19, prior art fails to disclose of fairly suggest a process including wherein, using a determination of step c), an object to be examined is positioned in such a way that a target position of a structure comes to lie within a volume detected by the CT scanner, further characterized in that, in addition to an actual position of the structure, a shape of the structure is also determined on the basis of a CT image or a CT data record, in combination with all the limitations in the claim.

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34. Regarding claim 20, prior art fails to disclose or fairly suggest a process including wherein using a determination of step c), an object to be examined is positioned in such a way that a target shape of a structure comes to lie within an area that is detected by a coordinate measuring instrument, further characterized in that a shape of the structure is determined on the basis of a CT image or a CT data record, in combination with all the limitations in the claim.

35. Regarding claim 21, prior art fails to disclose or fairly suggest a process including wherein using a determination of step c), the object to be examined is positioned in such a way that a target position of a structure comes to lie within an area that is detected by a coordinate measuring instrument, further characterized in that a position of at least three selected space points of a calibration object is determined with a CT scanner in a CT coordinate system as well as with the coordinate measuring instrument in an MI coordinate system, and a comparison of results obtained determine a relative location and a relative orientation of the CT coordinate system relative to the MI coordinate system, in combination with all the limitations in the claim. Claim 22 contains allowable subject matter by virtue of their dependency.

36. Regarding claim 40, prior art fails to disclose or fairly suggest a process including wherein using a determination of step c), an object to be examined is positioned in such a way that a target shape of a structure comes to lie within a volume detected by a CT scanner, further characterized in that a shape of the structure is determined on a basis of a CT image or a CT data record, in combination with all the limitations in the claim.

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37. Regarding claim 41, prior art fails to disclose or fairly suggest a process including wherein using a determination of step c), an object to be examined is positioned in such a way that a target position of a structure comes to lie within a volume detected by a CT scanner, further characterized in that a position of at least three selected space points of a calibration object is determined with the CT scanner in a CT coordinate system as well as with a coordinate measuring instrument in an MI coordinate system, and a comparison of results obtained determine a relative location and a relative orientation of the CT coordinate system relative to the MI coordinate system, in combination with all the limitations in the claim. Claim 42 contains allowable subject matter by virtue of its dependency.

Response to Arguments

38. Applicant's arguments with respect to claims 25-39 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Chih-Cheng Glen Kao', with a stylized flourish at the end.

Chih-Cheng Glen Kao
Examiner
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